

## **AUTOMATED ANALYSIS OF TURBINE COMPONENT THERMAL RESPONSE**

### **ABSTRACT OF THE DISCLOSURE**

In accordance with a first aspect of the present invention, thermal response of a turbine component to application of thermal stimuli is automatically analyzed by regions of interest. In accordance with another aspect, each region is analyzed for conformance for a number of thermal response metrics, in an absolute sense, and/or relative to each other. In one embodiment, the thermal response metrics include the temperature threshold a particular region (e.g. the reference/primary region) exhibits a critical response size, and that the sub-region achieving the critical response size at the temperature threshold also has a critical shape. In one embodiment, the analyses are performed using the pixel values of the constituting pixels of a picture frame of the turbine component's thermal response. In accordance with yet another aspect, a binary passed or failed conclusion is reached based on the results of the automated analyses.

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